EDITORIAL ARTICLES.

THE ETIOLOGY AND DIAGNOSIS OF MALIGNANT TUMORS, ESPECIALLY THOSE OF THE TONGUE AND THE LIPS.[1]

In an address before the Eighteenth Congress of German Surgeons, Professor FRIEDRICH ESMARCH, of Kiel, remarked that twelve years previously he had proposed to bring up the subject of malignant neoplasms for discussion. The following year it was decided to suggest a system for discussion, the preparation of which was left to a commission. This system was laid before the society in 1879, though its consideration was rejected, and as the systems also proposed by Billroth and Küster regarding tumors of the mamma did not produce any results the whole subject was forgotten.

Still these efforts were not entirely without effect. From many clinics and hospitals statistical articles on malignant tumors have been furnished, which have given valuable information on certain questions, so, *e. g.*, it was established by the statistical works on mammary cancer that it was sometimes permanently curable, at least for many years; that the probability of a definite cure is the greater the earlier and more thorough the operation is undertaken, and that since the introduction of antiseptic wound-treatment, the danger has become materially less, though the prospect of permanent cure has increased because, with the protection of antisepsis, the surgeon is able to operate much more radically than of yore. What holds for mammary cancer holds also in general for the malignant tumors of other parts of the body.

Now, it is very pleasant to answer such questions with numerical per cents and to be able by their help to make comparisons between the various methods of operation and wound-treatment. But, as a whole, these laborious works have not materially increased our knowledge, have not added much to what clinical experience had long since taught. Recently Esmarch has also had statistical collections worked out on more than 1,000 cases of tumors which had been treated at his clinic within 40 years. But there, likewise, the net result was not great.

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[1] From the author's abstract in the *Centralblatt f. Chirurgie*, No. 29, 1889.

There are also many more important questions than those above named, which are not answerable by existing statistics. On the origin of tumors, their heredity and connection with other diseases, on the diagnosis and the means and ways of distinguishing in advance the malignant from the benign tumors, the statistical works give no information. And yet these are all questions of even greater importance to the patient than to the physician.

What, however, takes a large part of their value from statistical works, no matter how conscientiously compiled, is the sources of error which depend on an often unavoidably faulty diagnosis. These mistakes depend only in part on the often very incomplete histories, in greater part on the fact that in the nearly 40 years over which Esmarch's observations extend, the views on the nature of tumors have materially changed, and that since kinds of tumors have been discovered which were not formerly recognized, though they must always have occurred, and hence, necessarily then been confused with other tumors, were falsely diagnosticated.

That we, however, at the present day are not by any means secured against such confusion he could show from his own experience and the acknowledgment of others. Consequently, operations have often been undertaken which, according to our present views, were at least unnecessary. In fact, on all parts of the body tumors occur that may give occasion to such mistakes. First to be named here are syphilitic tumors (syphiloma). In a case of syphiloma of the lip he showed how, after extirpation of the supposed cancer, relapses very quickly appear which, if the nature of the trouble be not recognized in time, steadily lead to fresh recurrence and melancholy death.

From like experience Esmarch has concluded that a great part of the tumors commonly considered as sarcoma and extirpated belong to the syphiloma and can be cured by specific treatment, although without this, they pursue a specially malignant course. For sarcoma of the muscular and nerve tissues he has proven this by statistical investigations. Likewise tubercular (tuberculoma) and actinomycotic tumors, as well as cysts and spontaneous fractures, are not rarely held to be sarcoma and carcinoma. In many such cases extensive operations have been undertaken, although, *e. g.*, the syphiloma can be cured by energetic internal treatment, the cysts by puncture and injection of irritating substances or by resection of their walls, the tubercular and actinomycotic tumors by scraping out and subsequent cauterization, the inflammatory spontaneous fractures by rest, waiting and extension.

Hence, in all cases where large and deforming operations are under consideration, the anatomical diagnosis should be made before the operation. This can often be assured by the microscopical examination of small fragments taken from the surface of an ulcerating tumor. In cases, however, where such an examination yields a negative or doubtful result, the medical man must not fold his hands in his lap, but must re-examine until the diagnosis is established, and must not hesitate to extract for this purposes sizeable pieces from the deeper portions of the tumors and even to make larger surgical attacks. In many cases simple akidoplasty has furnished excellent service; where, however, deforming and vitally dangerous operations are in question, larger surgical efforts, as fission of the larynx, trepanation, laparotomy, etc., are permissible or mandatory as diagnostic provisional operations.

When, however, the anatomical examination yields a negative result, *e. g.*, granulation tissue, then it is justifiable to suspect syphilis; and in such cases the diagnosis can be established by an energetic and properly prolonged antisyphilitic course. Even the most careful anamnesis in such cases many times gives no clue whatever. It is known that at times syphiloma do not appear until many years after the infection, without in the interim any signs of syphilis having shown themselves, and that they may exist many years without ulcerating.

Syphiloma develop with particular frequency in the tongue, consisting as it does principally of muscular tissue, and in the lips. Hence he lays down definite rules for the examination and treatment of ulcers and tumors of these parts. He emphasizes that the idea of malignancy does not by any means conform with the anatomical structure, and a division of the latter, according to benignancy and malignancy, has no value whatever.

For the origin of malignant neoplasms an immediate cause can be shown in many cases. Many malignant tumors arise, *e. g.*, from injuries, from irritation of most diverse kinds, transient or continuous (foreign bodies, sharp teeth, gall stones, burns, tobacco, soot and parafine), from scars, ulcers, benign tumors, chronic irritative conditions of the skin and mucous membrane. We know nothing, however, as to the cause of the irritated spot becoming malignant. There must in fact exist a still deeper reason for the malignancy, for which as yet we have sought in vain. The old theories of dyscrasias and crases were long since disproven by Virchow who, in their place, put predisposition, *i. e.*, a tendency which is supposed to rest on a certain weakness of the tissues. Cohnheim's hypothesis of the origin of malignant tumors from retained embryonic germs has proven untenable. That cancer is an infectious disease produced by micro-organisms is as yet not proven, and also not very probable. Other hypotheses regarding the origin of tumors likewise fail to explain wherefore from the same irritants in innumerable cases no cancer develops. All inquiries as to the final cause of the development of tumors so far have fallen back on the assumption of a weakness, a diminution of the physiological resistance of certain tissues. Since, however, for the origin of such a weakness a cause cannot in most cases be found, nothing remained but to assume an hereditary predisposition, although such cannot be proven in many cases. Still, many observations show that in certain families malignant growths are hereditary and occasionally occur in many members of different generations. Most such observations can only be made by family physicians, or may perhaps be derived from family chronicles. The most that the consulting surgeon learns is whether either parent has suffered from similar diseases. Whether, however, in generations farther back such diseases have occurred, the patients themselves are usually unable to state. And yet we must go farther back in our inquiries if we are to form an opinion on the question of heredity. It is indeed known that certain peculiarities are often inherited in families through many generations. Striking similarities in the physiognomy, are not only inherited from the father by the son, but often make their next appearance after skipping several generations. Mother marks and malformations of every kind are often inherited for several generations. The disposition to certain diseases, in particular nervous and psychical, is hereditary for many generations, often after intermediary members have remained quite free. The Darwinian theory rests on such facts. From his observations Esmarch has arrived at the presumption, and puts it forth as an hypothesis, that in many cases the origin of tumors, notably sarcoma, is connected with a predisposition derived from syphilitic antecedents.

It is proven that syphilis induces a tendency to proliferation of the connective-tissue type, and not rarely after long latency produces sarcomatous tumors, and if it is established that the disposition to diseases can be inherited for many generations, even skipping some, then in those cases in which neither an infection of the patient nor an inheritance from the parents can be shown we may go back to former generations to explain the origin of sarcomatous tumors.

Now, it is known that since ancient times in the most diverse regions of the world widely distributed diseases (Volkskrankheiten) have prevailed, characterized by eating sores arising from connective tissue proliferations of the skin-nodules (radesyge, morbus dithmarsicus, Pommeranian evil, Jutlandic, Lithuanic, Courlandic, Hessian, Canadian syphiloid, spirocolon—Greece;Crimskaja bollsua—Crimea; yaws, bubos, piaus—Africa; sibbeus—Scotland; button scurvy—Ireland; scerlievo—Croatia; mal di Fiume, mal di Ragusa, mal di Breno—Adriatic coast; frenga—Servia;falcadina—Venice; boala—Transylvania; morbus bruno gallicus—Brünn, etc.). The syphiloid nature of these was first recognized at the beginning of this century. With their correct recognition came the suitable treatment. Thereby these folk diseases lost their endemic character. Now, since it is not to be supposed that all those families in which at that time the disease prevailed have died out, it is not improbable that in many of their descendants a disposition to originate connective-tissue proliferation, *i. e.*, a predisposition to the formation of tumors, has remained, even when they are to all appearances quite healthy. In our time, also, especially in large cities, but also in the country, such diseases are still very prevalent, are often unrecognized and improperly treated or not treated at all, whence they are inherited by the coming generations. This would explain the disposition to connective-tissue tumors (sarcoma). Whether the disposition to proliferation of the epithelial tissue (to carcinoma) is to be explained in like manner must be left to further inquiries. It is known that syphilis can also occasion proliferation of epidermis structures, and that proliferation of the superficial layers of the epidermis is in a high degree hereditary. This holds also especially for xeroderma pigmentosum, the hereditability of which is proven, and which can give rise to cancerous as well as sarcomatous proliferation.

Appended to this article are 45 propositions bearing on diagnosis and etiology, for discussion by the Congress, though essentially contained in the article itself.

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